CURRICULUM VITAE

University of Idaho

NAME: Goodwin, Peter

DATE: February 20, 2011

RANK OR TITLE:
DeVlieg Presidential Professor of Civil Engineering
Director, Center for Ecohydraulics Research, College of Engineering
Director, Idaho EPSCoR/IDeA

DEPARTMENT: Civil Engineering

OFFICE LOCATION: College of Engineering - Boise
University of Idaho
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DATE OF FIRST EMPLOYMENT AT UI: August 15, 1996

DATE OF PRESENT RANK OR TITLE: July 1, 2002

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

Ph.D., Hydraulic Engineering, 1986, University of California, Berkeley
(Thesis undertaken in collaboration with the California Institute of Technology)
Major Professor: H.B. Fischer (dec. 1983), R.J. Sobey (UC Berkeley) and N.H. Brooks (Caltech)
M.S., Hydraulic and Coastal Engineering, 1982, University of California, Berkeley (GPA 4.0/4.0)
B.Sc., Civil Engineering (First Class Honors), 1978, University of Southampton, United Kingdom

Professional Background and Interests

Peter Goodwin is the founder of the Center for Ecohydraulics Research at the University of Idaho, an interdisciplinary group which works on the simulation of ecological response due to management actions or changes in physical processes of rivers, lakes, estuaries and wetlands. His research interests are in modeling physical processes in natural and disturbed aquatic systems, and quantifying benefits of restoration activities.

Dr. Goodwin has participated in river restoration, flood control and sediment management projects in several different countries. Research in watershed management issues include: the Deadwood River, Coeur d'Alene River basin, the Upper Salmon River basin and the Lake Amatitlan watershed in Guatamala. He has undertaken several multi-objective river enhancement plans that address flood hazard reduction, ecological enhancement, water quality, habitat and recreational opportunities; examples include, Russian River, Napa River, Boise River, Red River, Salmon River, San Lorenzo River, and Feather River. During a 2003-04 sabbatical, he was part of the team that established the multi-national Patagonian Ecosystems Research Center (CIEP) in Chile.

He has participated in many estuarine and tidal wetland projects on the East and West Coasts of the US, including a study of salinity intrusion in San Francisco Bay with Professor Hugo Fischer and has been the project manager/principal investigator for several wetland enhancement studies; examples include the Venice Canals and San Dieguito Lagoon in California. He has undertaken numerous modeling studies of estuarine, coastal and tidal wetland systems, including Mugu Lagoon, San Elijo Lagoon, Russian River Estuary, Sonoma Baylands, San Pablo Bay, Napa Salt Ponds and Delaware Bay).

Dr. Goodwin has taught undergraduate, graduate and continuing education courses in fluid mechanics, hydraulic engineering, sediment transport, hydrology, aquatic ecosystem restoration and computational hydraulics. As Director of Idaho EPSCoR/IDeA he is also involved with building the research enterprise of Idaho, building the k-12 STEM pipeline and developing programs to ensure the face of the future US workforce reflects the face of America.

EXPERIENCE:

Teaching and Research:

January 2010-present, Director, Idaho EPSCoR Program
January 2005-present, Director, Center for Ecohydraulics Research
July 2002-present, Professor, Department of Civil Engineering, University of Idaho
July 2001-present, DeVlieg Presidential Professor of Ecohydraulics, University of Idaho
August 1996-2002, Associate Professor, Department of Civil Engineering, University of Idaho
March 1998-present, Adjunct Professor, Department of Biological and Agricultural Engineering, University of Idaho
1990, Visiting Instructor, Department of Civil Engineering, University of California, Berkeley
1989-96, External Research Adviser, Computational Hydraulics and Environmental Modeling Research Group, University of Bradford, United Kingdom
1987-89, Academic Staff Member, Computational Hydraulics and Environmental Modeling Research Group, University of Bradford, United Kingdom
1986-89, Lecturer in Water Engineering, Department of Civil Engineering, University of Bradford, United Kingdom

Non-Academic Employment:

1989-96, Technical Director and Principal, Philip Williams and Associates, Ltd.

TEACHING ACCOMPLISHMENTS:

Courses Taught:

Undergraduate:
CE421/AgE451, Engineering Hydrology[1,2]
CE428/AgE458, Open Channel Flow[1,2]

Graduate:
CE504, Physical Processes in River Management
CE524, Water Resources Planning [1,2]
CE528, Stochastic Hydrology [1,2]
CE529/AgE555, Natural Channel Flow[1,2]
CE521, Sedimentation Engineering [1]

Other:
CE504, PE Review Course – Civil Engineering

[1] denotes class is delivered live and through compressed video (live multiple sites in Idaho)
[2] denotes class is delivered live and through video tape (web-assisted classes with students throughout the US and overseas)

Short Courses - Course Organizer for:
An Introduction to Surface Water Modeling for Stream and Riparian Restoration Planning and Design. Society for Ecological Restoration. October 18-19, 2005. The Pines Conference Center, Bass Lake, California. A part of the 12th Annual SERCAL Conference, October 20-22, 2005.
Muddling through Modeling: Overview of Current state of the Science in River, Wetland and Estuarine Modeling. For California State Water Resources Control Board. February, 2005.
Geomorphology and Aquatic Habitat Modeling. University of Concepcion, Chile. March 22-27, 2004. [1.0cr]

Short Courses - Course Organizer for (cont.):

An Interagency Workshop to Investigate the Feasibility of a Biobio River Scientific Forum: *Keeping the river functioning and working*. March 29, 2004

Muddling through Modeling: Overview of Current state of the Science in River, Wetland and Estuarine Modeling. For California Department of Fish and Game and the California Department of Water Resources. Sacramento. May 22-23, 2003.

Emerging Computational Methods, Boise, November 12-13, 2002

New Paradigms in River and Estuary Management, Boise. April 2-3, 2001

River Modeling, Boise, October 23-25, 2000.

New Paradigms in River Management. For US Army Corps of Engineers, Walla Walla, Washington, February 1999.

Ecohydraulics - Quantitative Approaches to Watershed Processes, Boise, October 19, 1998.

Tidal Wetland Restoration, ASCE Continuing Education Course, San Francisco, August 1997.

Environmental River Management: Physical Processes in Ecological Restoration, Enhancement and Preservation, University of Idaho, Boise, May 1997.

Mixing and Water Quality in Estuaries and Tidal Wetlands, for U.S. Navy, Environmental Division, Naval Air Station, Point Mugu, May 1995.

Physical Processes in Estuarine and Coastal Wetland Management, University of California, Berkeley, June 9-13, 1992.

Instructor in the following continuing education courses:

Hydroacoustic Techniques for Measuring Flow and Sediment Transport in Large River Systems. With the USGS and the University of Concepcion for the Chilean DGA and graduate students. Coyhaique, Patagonia. January-February 2011.

Impactos de la Hidroelectridad sobre el ambiente físico. Concepcion, Chile. October 11-30, 2009.

Minimizing environmental impacts of hydropower development: transferring lessons from past projects to a proposed strategy for Chile. January 19, 2009. Taller Científico: Desarrollo Hidroeléctrico en la Patagonia, Coyhaique, Chile.

Integrated River Basin Management: the Role of Technology for the Biobio River, Chile. A Workshop for Industries operating in the Biobio Region. January 22, 2009.

The Use of Technology in Watershed Planning and Management. October 11-12, 2006. Part of the "Watershed Stewardship" workshop for State and Federal Agencies, October 8-21, 2006. UC Riverside. Program supported by CALFED.

Muddling through Modeling: Overview of Current state of the Science in River, Wetland and Estuarine Modeling. For California State Water Resources Control Board. Davis, California. December 2004.

Integrated River Basin Management: Water Quality Assessment and Modeling. A UNESCO/ EU Graduate Program (3 credits). Centro EULA, University of Concepcion. January 2004

Graduate Seminar in River Restoration, University of California, Berkeley. [Instructors included L.B. Leopold and A.L. Riley]. Fall 1998.

Geomorphology in River and Stream Restoration, University of California, Berkeley, April 7-11, 1997; April 22-26, 1996; April 24-28, 1995.

Physical Processes in Environmental River Management, University of California, Berkeley, October 20-22, 1993. Co-organizer.

INSIGHT 88: A program to attract women into science and engineering, July 10-15, 1988.

Students Advised:

External International Ph.D. Examiner:

Wolfgang Kampke. (2010-present). Ichthyo-hydraulics. Karlsruhe Institute of Technology

Maria Loinez. (2009-present). Source, transport and effects of fine sediment loading on Silver Creek, Idaho. Riskpoint research program. Danish Technical University.

Hong Li. (2007-09) Spatial Pattern Dynamics In Aquatic Ecosystem Modelling Delft University of Technology, June 29 2009.

Daniele Botelho (2004-06). Non-Hydrostatic Modelling of Stratified Flow in Lakes and Reservoirs. University of Western Australia, Perth.

Bishnu Devkota (2003-2005). A New Approach to Modeling Large-scale River-Floodplain Systems. University of Western Australia.

Lisa Jane Cluett (2003-04). Morphological responses to changes in discharge: the Lower Ord River, Western Australia. University of Western Australia.

Anthony W. Minns (1998). Artificial Neural Networks in Hydrology. Technical University of Delft, The Netherlands

Major Professor of funded UI Students (Outreach Graduate Students not included), completion date shown:

Ph.D. Shawkat Ali, 2000-03, May 2003
Charles Berenbrock, 2003-present
Carter Borden, 2007-present
Diego Caamano, 2004-08, Dec 2008
Chris Campbell, 2007-present
Steven R. Clayton, 1997-2002, May 2002
Jack Harrison, 2000-05, May 2005
Jasna Muskatirovic, 1999-2005, May 2005
Sharon Parkinson, 2007-present
Shaun Parkinson, 1998-2007, June 2007
Andrew Tranmer, 2007-present
David Tuthill, 1997-2002, Fall 2002

M.S. Gloria Beattie, 1998-2002, May 2002
Holly Bentz, 2007-present
Ken Donley, 2000-01, December 2002
Scott King, 1998-2002, May 2002
Steve Lipscomb, 1998-2002, May 2002
Heidi McRoberts, 1999-2002, May 2002
Steve Sweet, 2008-present
Matt Tiedeman, 2009-present
Andrew Tranmer, 2004-07, June 2007
Toni Turner, 2005-09, May 2009.

Committee Member of UI Students ('Outside' Committee Member not included):

Ph.D. Jeffrey Barry, [Major Professor: J. Buffington]
Rohan Benjankar, [Major Professor: K. Jorde]
Tai Bui [Major Professor: J. Milligan]
Milos Manic [Major Professor: D. Wilamowski]
Michele Reba [Major Professor: D. Marks]
Daniele Tonina [Major Professor: J. Buffington]

M.S. Christopher Campbell [Major Professor: J. Boll]
Jeremy Newson [Major Professor: J. Boll]
Sharon Parkinson [Major Professor: J. Boll/A. Minns]
Stephen Robischon [Geography, Major Professor: Piotr Jankowski]
Denis Ruttenburg [Major Professor: K. Jorde]

External Committee Member (Outside the University of Idaho):

Joe Wagenbrenner Ph.D. (2009-present). Post-fire sediment transport characteristics in headwater streams. Washington State University

Jeffrey A. Lewandowski, Ph.D. (1989-93). Vegetation Resistance and Circulation Modeling in a Tidal Wetland. University of California, Berkeley.

Nicholas E. Klat, Ph.D. (1991-94). Two Dimensional Numerical Modeling of Tidal Wetlands. University of California, Berkeley.

Leslie Ferguson (2000-05). Quantifying the Effects of Stream Restoration on Fish Populations, University of California, Davis.

SCHOLARSHIP ACCOMPLISHMENTS: (* denotes student)

Books:

World Meteorological Organization/ Global Water Partnership, 2006. *Environmental Aspects of Integrated Flood Management*. The Associated Programme on Flood Management. A.C. Tyagi, M. Hyoda, A. Grobicki and WMO Expert Group. APFM Technical Document No. 3. Flood Management Policy Series.WMO, Geneva. 71p.

Drawing Louisiana's New Map: Addressing Land Loss in Coastal Louisiana, 2006. Committee on the Restoration and Protection of Coastal Louisiana. National Academies of Sciences. 190pp.

Falconer, R.A., and P. Goodwin (Eds.). 1994. *Wetland Management*. Thomas Telford, London. 289 pp.

Falconer, R.A., P. Goodwin, and R.G.S. Matthew (Eds.). 1989. *Hydraulic and Environmental Modeling of Coastal, Estuarine and River Waters*. Gower Technical Press. 694 pp.

Refereed Journal Publications:

Caamaño, D.*, P. Goodwin and J. Buffington, 2010. Flow structure through pool-riffle sequences and a conceptual model for their sustainability in gravel-bed rivers. River Res. Applic. 26: 1–13

Benjankar, R., N.F. Glenn, G. Egger, K. Jorde and P. Goodwin, 2010. Comparison of Field Observed and Simulated Map Output from a Dynamic Floodplain Vegetation Model Using Remote Sensing and GIS Techniques. GIScience and Remote Sensing. 47 (4). 480-497.

Caamaño, D*., Goodwin, P., Buffington, J.M., Liou, J.C., Daley-Laursen, S., 2009. A unifying criterion for velocity reversal hypothesis in gravel-bed rivers. Journal of Hydraulic Engineering. ASCE. 135(1). 66-70.

Barry, J.J.*, J.M. Buffington, P. Goodwin, J.G. King, and W.W. Emmett, 2008, Performance of bed-load transport equations relative to geomorphic significance: predicting effective discharge and its transport rate, Journal of Hydraulic Engineering. ASCE. 134(5): 601-615,

Tonina, D.*, C.H. Luce, S.R. Clayton*, S.M. Ali*, J.J. Barry*, B. Rieman, P. Goodwin, J.M. Buffington, C.E. Berenbrock*, *2008.*. Hydrological Response to Timber Harvest in Northern Idaho: Implications for Channel Scour and Persistence of Salmonids. Hydrological Processes, 22.

Rumps, J.M*; S.L. Katz, K. Barnas, M.D. Morehead, R. Jenkinson*, S.R. Clayton*, P.Goodwin, 2007. Stream Restoration in the Pacific Northwest: Analysis of Interviews with Project Managers. Journal of Ecology

Klein, L.R, S.R. Clayton*, and P. Goodwin, *2007*. Long-Term Monitoring and Evaluation of the Lower Red River Meadow Restoration Project, Idaho, USA. Journal of Restoration Ecology. 15(2). 223-239.

Refereed Journal Publications (cont.):

Goodwin, P., K. Jorde, C. Meier and O. Parra, 2006. Minimizing environmental impacts of hydropower development: transferring lessons from past projects to a proposed strategy for Chile. Journal of Hydroinformatics. 8(3). 1-19.

Bernhardt E.S., Palmer, M.A., , J.D. Allan, G. Alexander*, K. Barnas*, S. Brooks*, J. Carr, S. Clayton*, C.N. Dahm, J. Follstad Shah*, D.L. Galat, S.Gloss, P.Goodwin, D.D. Hart, B. Hassett*, R. Jenkinson*, S. Katz, G.M. Kondolf, P.S. Lake, R. Lave, J.L. Meyer, T.K. O'Donnell, L. Pagano, B. Powell and E. Sudduth*, 2005. Synthesizing U.S. River Restoration Efforts. *Science*, **308**, April 29, 636-637.

Goodwin, P., 2006. Closure. Analytical Solutions for Estimating Effective Discharge. *Journal of Hydraulic Engineering*. ASCE. 131(1).

Palmer, M.A., E.S. Bernhardt, J.D. Allan, P.S. Lake, G. Alexander*, S. Brooks*, J. Carr, S. Clayton*, C.N. Dahm, J. Follstad Shah*, D.L. Galat, S.Gloss, P.Goodwin, D.D. Hart, B. Hassett*, R. Jenkinson*, G.M. Kondolf, R. Lave, J.L. Meyer, T.K. O'Donnell, L. Pagano and E. Sudduth*, 2005. Standards for ecological successful river restoration. *Journal of Applied Ecology*, 42(2). 208-217.

Goodwin, P., 2004. Analytical Solutions for Estimating Effective Discharge. *Journal of Hydraulic Engineering. ASCE. 130(8). 729-738.*

Goodwin, P., 2001. New Paradigms in River and Estuary Management. Forum Article. *Journal of Hydraulic Engineering*. ASCE. 127(10), 792-793.

Goodwin, P., A.J. Mehta and J.B. Zedler, 2001. Tidal Wetland Restoration. *Journal of Coastal Research. SI27. 1-7.*

Goodwin, P. and R.Z. Kamman*, 2001. Mixing and Circulation in Tidal Wetlands. *Journal of Coastal Research.SI27. 109-120*

Slaughter, C.W., P. Goodwin and R. Marbury*, 2000. Watershed Considerations for Integrated Stream Modeling. *International Journal of Sediment Research*, 15(1). 42-50.

Goodwin, P. and T. B. Hardy, 1999. Integrated Simulation of Physical, Chemical and Ecological Processes for River Management. *Journal of Hydroinformatics* 1(1). IAWQ. August. 33-58.

Josselyn, M.N., and P. Goodwin. 1999. Incorporation of Global Climate Change into Tidal Marsh Restoration Planning. *Journal of Current Topics in Wetland Biogeochemistry*, Vol. 3. 62-71.

Goodwin, P. 1996. Predicting the Stability of Tidal Inlets for Wetland and Estuary Management. *Journal of Coastal Research*. SI 23, Winter, 83-101.

Goodwin, P., and P.B. Williams. 1992. Restoration of Coastal Wetlands: The Californian Experience and Potential Applications in Europe. *Journal of the Institution of Water and Environmental Management*, 6, 709-719.

Goodwin, P., and R.A. Denton. 1991. Seasonal Influences on the Sediment Transport Characteristics of the Sacramento River, California. *Proceedings of the Institution of Civil Engineers*, Part 2, 91, 163-172.

Sobey, R.J., P. Goodwin, R.J. Thieke*, and R.J. Westburg, Jr*. 1987. Application of Stokes, Cnoidal and Fourier Wave Theories. *Journal of Waterways, Port, Coastal and Ocean Engineering*, ASCE, 113(6), 565-587.

Lyn, D.A., and P. Goodwin. 1987. Stability of a General Preissmann Scheme. *Journal of Hydraulic Engineering*, ASCE, 113(1), 16-28.

Refereed Publications:

Goodwin, P, C.M. Falter and A.D.K. Betts*, 2000. Managing for Unforeseen Consequences of Large Dam Operation. Invited White Paper by the World Commission on Dams. Thematic Review Options Assessment IV.5: Operating, Monitoring and Decommissioning of Dams. 26p.

Weinstein, M., P., K.R. Philipp and P. Goodwin. 2000. Catastrophes, Near-Catastrophes and the Bounds of Expectation: Success Criteria for Macroscale Marsh Restoration. In Weinstein, M. P. and D. A. Kreeger, eds., *Concepts and Controversies in Tidal Marsh Ecology*. Kluwer Academic Publishing: Dordrecht, The Netherlands, 237-259.

Florsheim, J., P. Goodwin, and L. Marcus. 1998. Geomorphic Effects of Gravel Extraction in the Russian River, California. In *Aggregate Resources: A Global Perspective*. A.A. Balkema, Rotterdam, 88-99.

Tuthill, D.*, and P. Goodwin. 1998. Developing Decision Support for Implementation of Conjunctive Management in the Boise River Basin, Idaho. *Hydroinformatics 98*, A.A. Balkema/Rotterdam/Brookfield. 341-346

Slaughter, C.W., and P. Goodwin. 1998. Hydrologic Modeling Approaches for Integrated Management of Stream Systems. *First Federal Interagency Hydrologic Modeling Conference*, April 1998. I, 119-125.

Barnett, A.M., P. Goodwin, R.S. Grove, and F.L. Melone. 1994. Interdisciplinary Approach to Coastal Wetland Restoration. In *Hydroinformatics '94: Selected Papers of the First International Conference on Hydroinformatics*, Delft, September 22-24. A. Verwey, A. Minns, V. Babovic, and C. Maksimovic, Editors. A.A. Balkema, Rotterdam, 391-396.

Goodwin, P. 1994. Physical Processes in Tidal Wetland Restoration. *Procs. of the First International Conference on Wetland Management*, June 2-4, Institution of Civil Engineers, London. 130-142.

Goodwin, P., J. Lewandowski*, and R.J. Sobey. 1992. Hydrodynamic Simulation of Small-Scale Tidal Wetlands. *Hydraulic and Environmental Modeling of Estuarine and River Waters*, Chapter 13, R.A. Falconer, K. Shiono, and R.G.S. Matthew, Eds., 149-161.

Goodwin, P., R.G.S. Matthew, and N.G. Wright*. 1989. Simulation of Flood Wave Propagation Due to Dam Failure Using the Preissman Scheme. *Proceedings of the International Conference on Hydraulic and Environmental Modeling of Coastal, Estuarine and River Waters*, Bradford, United Kingdom, 494-505.

Conference Proceedings and Articles:

Parkinson, S., D. Caamaño, P. Goodwin and R. Benjankar, 2011. Field Evaluation of Pool Sustainability in Gravel Bed Rivers. 34th IAHR Biennial Congress. Balance and Uncertainty: Water in a Changing World. Brisbane, Australia, June 26-July 1, 2011.

Sagar Neupane, Erika Ottenbreit, S.M. Helalur Rashid, Joseph Wagenbrenner, Peter Goodwin and David R. Tuthill, Jr.. 2011. Re-Building Consensus In The Henry's Fork Watershed: A Technical And Social Case Study Leading To A Path Forward For The Henry's Lake Outlet. 10th Annual River Restoration Northwest Symposium. Session 8. Skamania Lodge, Washington. Feb 1-3.

Ruttenberg, D.A., K. Jorde, P. Goodwin, S. Clayton and P. Connolly, 2009. Hydraulic modeling and upstream fish passage effectiveness evaluation at rock vortex weirs based on field observations. 33rd IAHR World Congress, Water Engineering for a Sustainable Environment, Vancouver, British Columbia, Aug 9-14. TS15,C1.1-8.

Conference Proceedings and Articles (cont.):

Caamano, D., M. McGowan and P. Goodwin, 2009. Green LiDAR and Two Dimensional Hydraulic Floodplain Modeling: An Optimal Tool for Flood Risk Outreach and Planning. 8th HIC-1A2-AM4. International Conference on Hydroinformatics. International Association for Hydraulic Engineering and Research. Concepción, Chile. January 12-16.

Budwig, R., McLaughlin, R.E., Clayton, S., Sweet, S., and Goodwin, P., 2009. Physical modeling of wave generation for the Boise River Recreation Park in the Center for Ecohydraulics Stream Laboratory. Procs. of the International Conference of Science and Information Technologies for Sustainable Management of Aquatic Ecosystems, Concepción, Chile, January 12 -16, 2009.

Tranmer, A.W. and P. Goodwin, 2009. Can General Circulation Models Detect Climate Change Signature in Catchment Scale Hydrology in the Intermountain West, USA? Procs. of the Proceedings of the International Conference of Science and Information Technologies for Sustainable Management of Aquatic Ecosystems, Concepción, Chile, January 12 -16, 2009.

McCarty, K., M. Manic, P. Goodwin, M. Piasecki, 2009. Submission and Querying Tools for A Hydrologic Information Systems Database. HIC-1B1-DM4. 8th International Conference on Hydroinformatics. IAHR. Concepción, Chile. January 12-16, 2009

Caamano, D. and P. Goodwin, 2007. On the Velocity Reversal Hypothesis. .IAHR Biennial Congress. Venice, Italy. July 4-8.

Caamanao, D., P. Goodwin and M.Manic, 2006. Derivation of Bedload Transport Formula Using Artificial Neural Networks. 7th Int. Conf. on Hydroinformatics, Nice, France. IAHR.

Barry, J.J., J.M. Buffington, J.G. King, and P. Goodwin, 2006, The Performance of bed load transport equations in mountain gravel-bed rivers: A re-analysis. Proceedings of the 8th Federal Interagency Sedimentation Conference, Reno, NV, April 2-6, 2006.

Goodwin, P., 2005. Sediment transport in the sustainability of river form and process. NSF Pan-American Advanced Study Institute. Is sustainable hydropower development in an adaptive management framework achievable? Concepcion, Chile. January 7-30, 2005.

Muskatirovic, J. and P. Goodwin, 2005. Prediction of bedload transport in gravel bed rivers with stable armor layer. XXXI IAHR Congress: Water Engineering for the Future – Choice and Challenges. Paper: PAHR05-0419. September 11-16, Seoul, Korea.

Barry, J.J., J.M. Buffington and P.Goodwin, 2004. Performance of Bedload Transport Equations Relative to Geomorphic Significance. AGU Conference, San Francisco

S.R. Clayton, J.K. Brostrom, I. Scherrer, P. Goodwin, and K. Jorde "Quantifying Physical and Biological Responses to Stream Restoration", "Annual Meeting of Western Division of the American Fisheries Society", February 2004, Salt Lake City, USA

Goodwin, P., 2003. Restoration of aquatic ecosystems: detecting and quantifying change. Invited Paper at *Water: histories, cultures and ecologies* Conference. Perth, Australia.

Muskatirovic, J. and P. Goodwin, 2003. On the prediction of Sediment Transport in Gravel Bed Rivers: Examples from Streams in Central Idaho. XXX IAHR Congress. C 663-670.

Goodwin, P., S.J. Clayton*, and J.K. Brostrom, 2002. Application of Adaptive Management to Stream Restoration at the Reach Scale. Invited Paper at the Symposium "*Adaptive Management in the Columbia Basin and Beyond.*" International Conference of the Transboundary Group and American Fisheries Society. Toward Ecosystem-Based Management: Breaking Down Barriers in the Columbia River Basin and Beyond. Spokane, Washington, April 27-May 1, 2002.

Conference Proceedings and Articles (cont.):

S.J. Clayton*, J.K. Brostrom and P. Goodwin, 2002. Evaluating Physical and Biological Responses to River Restoration. International Conference of the Transboundary Group and American Fisheries Society. Toward Ecosystem-Based Management: Breaking Down Barriers in the Columbia River Basin and Beyond. Spokane, Washington, April 27-May 1, 2002.

Ali, S.* and P. Goodwin, 2002. The Predictive Ability of 1-d Models to Simulate Floodplain Processes. Hydroinformatics 2002. Volume I: Model Development and Data Management. Cardiff, UK. July 2002. IAHR.247-52.

Tuthill, D.R.*, P. Goodwin and P. Jankowski, 2002. Utilization of Emerging Geo-spatial Technologies in Conjunctive Administration of Surface and Groundwater at the Catchment Scale. Hydroinformatics 2002. Volume II: Software Tools and Management Systems. Cardiff, UK. July 2002. IAHR.916-922.

N.G. Wright, M.T. Dastorani*, P. Goodwin and C.W. Slaughter, 2002. A Combination of Neural Networks and Hydrodynamics for River Flow Prediction. Hydroinformatics 2002. Volume II: Software Tools and Management Systems. Cardiff, UK. July 2002. IAHR.1627-34.

Goodwin, P., 2000. A View of Hydroinformatics in the United States. Editorial in the *Journal of Hydroinformatics*, IAHR-IWA.1-3.

Wright, N.G., P. Goodwin and S. Ali*, 2001. The Importance of Appropriate Model Selection in Quantifying the Role of Floodplains in Flood Hazard Prediction. *Proceedings of the Symposium on Environmental Hydraulics*, December 2001, University of Arizona.

Clayton, S.R*, G.S. Beattie* and P. Goodwin, 2001. Performance Evaluation of River Restoration. *21st Century: The New Era for Hydraulic Research and Its Application*. XXIX IAHR Congress of the International Association for Hydraulic Research. Beijing, China. September 17-21, 2001. Vol. D1, 101-107.

Parkinson, S.K*., J.A. Chandler and P. Goodwin, 2001. Simulation of White Sturgeon Response under Managed Flow Regimes. *21st Century: The New Era for Hydraulic Research and Its Application*. XXIX IAHR Congress of the International Association for Hydraulic Research. Beijing, China. September 17-21, 2001. Vol . D2. 697-705.

Muskatirovic, J.* and P. Goodwin, 2001. Aquatic Ecosystem Review in the Salmon River Basin. *21st Century: The New Era for Hydraulic Research and Its Application*. XXIX IAHR Congress of the International Association for Hydraulic Research. Beijing, China. September 17-21, 2001. Vol. B. 347-351.

Tuthill, D.R.,* and P. Goodwin, 2001. Utilization of Emerging Geo-Spatial Technologies in the Implementation of Conjunctive Management of Surface and Ground Water in the Boise River Basin. (Invited paper and presentation at the Environmental & Water Resources Institute Specialty *Symposium on Integrated Surface and Ground Water Management* held as part of the World Water and Environmental Resources Congress in Orlando, Florida, May 20-24, 2001).

Ali, S.*, C.W. Slaughter and P. Goodwin, 2001. Ecohydraulic model application in a steep rangeland. *Seventh Federal Interagency Sediment Transport Conference*. Session 6A. Reno, Nevada. Vol. I: Sediment and Flow Modeling, 168-175.

Goodwin P., J. Muskatirovic*, K. Overton and B. Rieman, 2000. Aquatic Systems Review. Invited opening keynote lecture, 4th International Conference on Hydroinformatics, *Hydroinformatics 2000*. Iowa Institute of Hydraulic Research, 23-27 July. International Association for Hydraulic Research. xxviii and 1-17.

Beattie, G.S. *, P. Goodwin, S.R. Clayton*, S. Bauer and A.W. Minns, 2000. Performance Evaluation of River Restoration. In *New Trends in Water and Environmental Engineering for Safety and Life: Eco-compatible Solutions for the Aquatic Environment*. U. Maione, B.M. Lehto, R. Monti (eds.). A.A. Balkema, 18-29.

Conference Proceedings and Articles (cont.):

Overton, C.K., P. Goodwin and J. Muskatirovic*, 2000. A subbasin assessment approach for developing native salmonid conservation and restoration strategies. 12th International Trout Stream Habitat Improvement Conference "*Trout Stream Habitat in the New Millennium*." Waterville, New Hampshire. Sept 11-13.

Tuthill, Jr., D.R.*, and P. Goodwin, 2000. Implementation of conjunctive management in the Boise River basin using a GIS-based decision support system. 4th International Conference on Hydroinformatics, *Hydroinformatics 2000*. Iowa Institute of Hydraulic Research, 23-27 July. International Association for Hydraulic Research.

Parkinson, S.K.*, Chandler, J.A. and P. Goodwin, 2000. An approach to simulating behavioral responses of juvenile white sturgeon to river management strategies. 4th International Conference on Hydroinformatics, *Hydroinformatics 2000*. Iowa Institute of Hydraulic Research, 23-27 July. International Association for Hydraulic Research.

Slaughter, C.W., and P. Goodwin, 2000. Dynamic hydraulic modeling for a rangeland stream. Soils/Hydrology Technical Session, *Society for Range Management Conference 2000*, Boise, Idaho, February.

Slaughter, C.W., G. Hyde, J.A. Scanlin, P. Goodwin and R. Beckwith, 2000. Partnerships incorporating students in watershed research, *Society for Range Management 2000*, Boise, Idaho, February.

Slaughter, C.W., P. Goodwin, J.A. Scanlin, B. Beckwith and G. Hyde, 2000. The role of students in collaborative watershed research. *8th Biennial Watershed Management Council Conference*, Pacific Grove, California.

Slaughter, C.W., P. Goodwin, and R. Marbury*, 1999. Watershed Considerations for Integrated Stream Modeling. Procs. *Sediment Management in Agricultural Watersheds. US-China Bilateral Conference*. Oxford, MS. December 6-9.

Parkinson S.K.*, J.A. Chandler and P. Goodwin 1999, Conceptual Decision Support for Preserving White Sturgeon Populations. *3rd International Conference on Ecohydraulics*, IAHR. Salt Lake City, July.

S.R. Clayton*, P. Goodwin, G.B. Beattie*, A.W. Minns, and S. Bauer, 1999. Monitoring Performance of River Restoration Projects. *3rd International Conference on Ecohydraulics*, IAHR. Salt Lake City, July.

Klein, L.R, D. Dawes, P. Goodwin, and S. Bauer. 1998. Lower Red River Meadow Restoration: A Case Study. Conference and Annual Meeting of the Society for Ecological Restoration. *Ecosystem Restoration: Turning the Tide*, October 28-30, Tacoma, Washington.

Slaughter, C.W., P. Goodwin, and R.J. Marbury*. 1998. Research Applications of Long-Term Catchment Information: Reynolds Creek Experimental Watershed, Idaho, US. Poster Presentation, *Hydroinformatics 98*, Copenhagen, Denmark.

Neary, V., A. Mead, P.B. Williams, and P. Goodwin. 1998. Geomorphic Design for Large Scale River Restoration- the Napa River. Engineering Approaches to Ecosystem Restoration, D.F. Hayes, Ed.. Procs. of *ASCE Wetlands Engineering and River Restoration Conference*, Denver, March. ASCE.

Goodwin, P., C.W. Slaughter, and R. Marbury*. 1998. Dominant Discharge as a Design Criteria in River Restoration. Engineering Approaches to Ecosystem Restoration, D.F. Hayes, Ed.. Procs. of *ASCE Wetlands Engineering and River Restoration Conference*, Denver, March. ASCE.

Goodwin, P., K. Philipp, and M.N. Josselyn. 1998. Hydrologic and Geomorphic Design for Large Scale Tidal Wetlands. Engineering Approaches to Ecosystem Restoration, D.F. Hayes, Ed.. Procs. of *ASCE Wetlands Engineering and River Restoration Conference*, Denver, March. ASCE.

Conference Proceedings and Articles (cont.):

Slaughter, C.W., P. Goodwin, and L. Huber. 1998. Upland Watershed Considerations for Comprehensive River Restoration. Engineering Approaches to Ecosystem Restoration, D.F. Hayes, Ed.. Procs. of *ASCE Wetlands Engineering and River Restoration Conference*, Denver, March. ASCE. 96-101.

Slaughter, C.W. and P. Goodwin, 1998. Hydrologic Modeling Approaches for Integrated Management of Stream Systems. Procs. *First Federal Interagency Hydrologic Modeling Conference*, Interagency Advisory Committee on Water Data, Vol. I. 119-125.

Slaughter, C.W., and P. Goodwin. 1998. Application of Hydraulic Modeling Approaches to a Rangeland Watershed Stream. *51st Annual Meeting, Society for Range Management*, Guadalajara, February, 49-55.

Neary, V.S., P.B. Williams and P. Goodwin, 1998. A Geomorphic Channel Design for Napa River. *Water Resources Engineering '98*. Procs. of Int. Water Resources Engineering Conference, Memphis, Tennessee, August 3-7. S.R. Abt, J. Young-Pezeshk and C.C. Watson eds., ASCE.

Neary, V.S., A. Mead, P.B. Williams, and P. Goodwin. 1997. Hydraulic Geometry for River Estuaries. *Environmental and Coastal Hydraulics: Protecting the Aquatic Habitat*. Vol. 1. Procs. 27th Congress of the International Association for Hydraulic Research and the ASCE Conference: Water for a Changing Global Community, 683-688.

Josselyn, M.N., and P. Goodwin. 1997. Incorporation of Global Climate Change into Tidal Marsh Restoration Planning. *Fifth Symposium on the Biogeochemistry of Wetlands*. University of London.

Balletto, J.H., P. Goodwin, M.N. Josselyn, and K.J. Salamon. 1996. Macro-Scale Wetland Restoration: Meeting the Multiple Demands of Scientists, Regulators and the Public. *Wetlands for the Future*, Intecol International Wetland Conference, Perth, Western Australia, p. 112.

Jordan, J.J., Y. Rubin, and P. Goodwin. 1995. Using Modeling to Establish Aggregate Mining Standards for Groundwater Protection. *Water Resources at Risk*, W.R. Hotchkiss, J.S. Downey, E.D. Gutentag, and J.E. Moore, American Institute of Hydrology, 97-107.

Jordan, J.J., J. Florsheim, and P. Goodwin. 1995. Using Water Resource and Riparian Parameters to Develop a River Management Program. *Water Resources at Risk*, W.R. Hotchkiss, J.S. Downey, E.D. Gutentag, and J.E. Moore, American Institute of Hydrology, 88-96.

Havno, K. and P. Goodwin, 1995. Hydraulic Modeling of Ecological Criteria: toward an integrated approach for hydrologic, geomorphic and ecologic understanding of river corridors. Seminar 2. *XXVI IAHR Congress*, London. 1-6.

Goodwin, P. 1994. Circulation and Mass Transport in Tidal Wetlands. Invited Paper at the *Annual Conference of the Western Society of Naturalists*, Monterey, California, December 26-30.

Liang, H.B., R.N. Coats, and P. Goodwin. 1994. The Limitations of Computer Modeling for Environmental River Management. *Procs. of the American Watershed Management Council Conference*, Ashland, Oregon.

Cuffe, C.K., P. Goodwin, and J. Nielsen. 1993. Physical and Biological Effects of Inlet Closure and Breaching - Russian River Estuary, California. *Proceedings of the American Fisheries Meeting*.

Goodwin, P., J. Nielsen, and C.K. Cuffe. 1993. The Tidal Inlet Characteristics of a Small California Estuary. Hydraulic Engineering '93. *Proceedings of ASCE National Conference on Hydraulic Engineering*, H.W. Shen, S.T. Su, and Feng Wen, Eds., Vol. 1, 562-567.

Liang, H.B., C.K. Cuffe, P. Goodwin, and T. Abbe. 1993. Wave-Induced Erosion on a Tidal Marsh in Corte Madera Bay. Coastal Zone '93. *Proceedings of the 8th Symposium on Coastal and Ocean Management*, New Orleans, Louisiana.

Conference Proceedings and Articles (cont.):

Lewandowski, J.A.*, R.J. Sobey, and P. Goodwin. 1993. A Hydrodynamic Model for a Tidal Wetland. Hydraulic Engineering '93. *Proceedings of ASCE National Hydraulic Conference*, H.W. Shen, S.T. Su, and Feng Wen, Eds., Vol. 1, 574-579.

Florsheim, J.L., P. Goodwin, and Y. Rubin. 1992. Historic Changes in Geomorphic and Hydrologic Processes in the Russian River, California. *EOS Transactions*, AGU 73(43):41.

Florsheim, J.L., P. Goodwin, P.B. Williams, T. Abbe, and F.A. Booker. 1991. Analysis for Restoration of a Tidal Marsh, Slough Channel Evolution and Marsh Plain Sedimentation, San Francisco Bay, California. *GSA* 23(5):41, San Diego, California.

Goodwin, P. 1991. Environmental Design of Flood Control Projects. Invited Paper at the *State Floodplain Management Association Annual Conference*, Sacramento, California.

Goodwin, P., T. Abbe, and P.B. Williams. 1991. Marsh Erosion by Wave Action in Corte Madera Bay, California. Coastal Zone '91. *The Seventh Symposium on Coastal and Ocean Management*, Vol. 2, 1747-1761.

Goodwin, P., and P.B. Williams. 1991. Short-Term Characteristics of Coastal Lagoon Entrances in California. Coastal Sediments '91. *Symposium on Quantitative Approaches to Coastal Sediment*, ASCE, Seattle, Washington, Vol. 1, 1192-1206.

Goodwin, P. 1987. Aspects of Sediment Transport Modeling. Invited paper at the *International Symposium on Water Pollution Control and Water Treatment Techniques,* Tongji University, Shanghai, 12-21.

Goodwin, P., and R.J. Sobey. 1986. Which Wave Theory? *Proceedings, IBM University AEP Conference*, San Diego.

Professional Meeting Papers:

Selected Keynotes and Recent Invited Research Presentations:

'Flow Structure and the Sustainability of Pools in Gravel Bed Rivers'. Gerhard Jirka Memorial Symposium. Karlsruhe. June 2011.

'Construyendo Comunidades Sustentables y con Resiliencia para Enfrentar Desastres: El Rol de las Universidades'. *UN, World Bank, Chilean Ministry of Planning Workshop: RECONSTRUCCIÓN REGIONAL DESAFIOS Y OPORTUNIDADES. Concepción, Chile. April 13, 2010*

'Trends in Interdisciplinary Environmental Research in the US'. Seminario Internacional. Los aportes de EULA a la Investigación y Formación de Recursos Humanos en Medio Ambiente en Chile. November 25, 2010. Concepción, Chile.

'River Restoration – A Global Perspective'. Keynote Lecture to the National Hydraulic Engineering Conference, Vina del Mar, Chile. October 21, 2009.

'Managing Rivers for Water Quality and Sequestration of Carbon and Mercury'. Opening Plenary talk to the European Union RISKPOINT Initiative. Copenhagen, Denmark.October 5, 2009.

'The California Bay-Delta System and CALFED Science Program'. In 'Lessons from other large-scale ecosystem management programs'. Louisiana Coastal Action Plan Science Board and General Walsh, Commanding Officer and Chair, Mississippi River Basin Commission. ERDC, Vicksburg, Mississippi. April 8, 2009.

Selected Keynotes and Recent Invited Research Presentations (cont.):

'Avances en ingeniería eco-hidráulica en Norte América [New Trends on Hydro-Ecological Engineering in North America]: El papel de la comunidad de la ciencia [The Role of Community Science]'. CEDEX (Ministry of Public Works, Spain). Madrid. March 23, 2009.

'Watershed Management for Water Quality'. Stormwater Technical Conference. Partners for Clean Water and EPA. Boise. March 3-4, 2009.

'The Role of Community Science for Managing Large Delta Systems'. Also Facilitator and co-Author of Aquaterra Statement. (www.aquaterraforum.com) Prepared for the World Water Forum. A Whitepaper to declare Deltas and estuaries, regions of special concern. Aquaterra 10-12 February 2009.

"Technology to Manage Rivers and Wetlands in a Hot, Flat and Crowded World". Keynote Lecture at the Joint Conference, 'Science and Information Technologies for Sustainable Management of Aquatic Ecosystems'. 7th International Symposium on Ecohydraulics and 8th International Conference on Hydroinformatics. International Association for Hydraulic Engineering and Research. Concepción, Chile. January 12-16, 2009.

'Minimizing environmental impacts of hydropower development: transferring lessons from past projects to a proposed strategy for Chile'. January 19, 2009. Taller Científico: Desarrollo Hidroeléctrico en la Patagonia, Coyhaique, Chile.

"Human, Physical, and Natural Capital Investment in Patagonia: a Predictive Approach under the Sustainability Criterion". Institution of Civil Engineers. 2008 Americas Convention, 'Sustainability'. October 4. Las Vegas.

"Recent advances at the interface of Ecosystem Restoration and Cyberinfrastructure". Keynote Lecture. Asian River Restoration Network. University of Tokyo. September 16, 2008

"Approaches to Predicting the Performance of River and Wetland Restoration". Keynote. 15th International Conference on Physical Processes in Natural Waters, Lake Tahoe, September 2-5, 2008.

"Quantitative Performance Assessment of Stream Restoration". Keynote. Montana River Restoration Conference, Missoula September 21-22, 2007

"Building a globally competitive research program: the example of the Center for Ecohydraulics Research", Idaho Business Council, Arid Club, Boise. June 13, 2007.

"Building Environmental Observatories: The Example of the Idaho Experimental Watershed Network". Keynote. Spring Runoff Conference, Utah State University, April 5-6, 2007.

" Detecting and Predicting Change in Aquatic Ecoosystems". Arizona State University, Environmental Fluid Mechanics Seminar. March 7,2007

"Adaptive Management of Catchments". Workshop for Self-learning Methodologies. Public Utilities Board, Singapore. January 24-26, 2007.

"Challenges of Managing for a Sustainable Urban Environment". Department of Civil Engineering, National University of Singapore. January 29, 2007.

"Engineering Design for Climate Change and Coastal Communities". Plenary Talk. National Conference on Coastal and Estuarine Habitat Restoration: Forging the National Imperative. www.estuaries.org. New Orleans, Louisiana. Dec 9-13, 2006.

Selected Keynotes and Recent Invited Research Presentations (cont.):

"Challenges of Managing the Lower Mississippi River in Coastal Louisiana". Session 4B. Idaho Water Resources Research Symposium, Boise, Idaho. November 28-29, 2006.

"The River, Landscape and Community: Choices for the Future of the Boise River". Boise Environmental Lecture Series. June 2006.

"Trends in Community Science in the United States: the Example of Water Research. What small states are doing to remain competitive." Presentation to the Federal Reserve Board, Idaho Water Center, September 6, 2006. Lecture delivered live from the IAHR International Conference on Hydroinformatics, Nice, France. Presentation included the benefits of the NSF EPSCoR program.

" Emerging Technologies for Improving our Predictive Capabilities of River Response to Restoration". Keynote Address. Fifth Annual Northwest Stream Restoration Design Symposium. January 31-Feb 2, 2006. Skamania Lodge, Stevenson, Washington.

"Tendencias hacia Ciencias de la Comunidad: Observatorios Medioambientales y Redes Globales". American Academy of Science and Technology, Santiago, Chile. January 6, 2006.

"Approaches to Evaluating Impact of Dam Operation on Reservoir Productivity". Payette Watershed Dam Operations Workshop: US Bureau of Reclamation, January 27, 2006

"Opportunities and Expectations of Graduate Schools". Invited presentation at the Fourteenth Regional Conference on Undergraduate Research of the Murdock College Science Research Program. Northwest Nazarene University. November 11, 2005.

"Future Research Directions for IAHR: Cyberinfrastructure, Sensor Networks and Large Community Science". Address to the Council of the International Association for Hydraulic Research. September 8-10, 2005. Seoul, Korea.

"Creating a global student chapter network for graduate education and research support". Address to the Student Chapters of the International Association for Hydraulic Research, XXXI IAHR Congress: Water Engineering for the Future – Choice and Challenges. September 11-16,2005 Seoul, Korea.

"Opportunities for Multi-National Collaboration in Chile: EULA and CIEP". 57th Annual Conference of NAFSA, Seattle, Washington. Invited by the US-Chile Binational Commission. May, 2005

"Sinergias Europa-América para la conservación de ecosistemas únicos: LA PATAGONIA CHILENA." Cordoba, Spain. 20-22 April. Parra, O. and P. Goodwin, 2005

"Las Exigencias Académicas en EE.UU". Invited presentation to new 2004 Fulbright Scholars from Chile before their departure to the US. COMISION PARA EL INTERCAMBIO EDUCATIVO ENTRE CHILE Y LOS ESTADOS UNIDOS DE AMERICA. June 3, 2004.

"Las bases científicas y los enfoques de manejo de las normativas de calidad del agua en USA"; Invited presentation at 'Normativas de calidad del Aqua: Bases cientificas y enfoques de gestion', Centro de Ciencias Ambientales EULA-Chile. January 8, 2004.

"Sustainability of Tidal Wetlands". ACE Seminar, Perth, Australia. September 2003.

"Holistic Approaches to River Assessment and Management"; Pontificia Universidad Católica de Chile, Departamento de Ingeniería Hidráulica y Ambiental, Seminar on the Environment, November, 27, 2003.

"Quantitative Approaches to Detecting Ecological Change due to Restoration", Environmental Dynamics Seminar, University of Western Australia. September 18, 2003.

Selected Keynotes and Recent Invited Research Presentations (cont.):

"Holistic Approaches to River Assessment and Management"; Pontificia Universidad Católica de Chile, Departamento de Ingeniería Hidráulica y Ambiental, Seminar on the Environment, November 27, 2003.

"Emerging Technologies and Recent Advances in Analysis for Watershed Management". Keynote Address. Ninth Biennial Conference, Watershed Management Council. Skamania Lodge, Washington. November 3-7, 2002.

"Ecohydraulics". Invited Speaker and participant at CLEANER (Collaborative Large-Scale Engineering Assessment Network for Environmental Research). Environmental Engineering Program, National Science Foundation, Duke University. October 20-22, 2002.

"A Vision for the Boise River." Idaho Environmental Forum, Boise. May 29, 2002.

"Adaptive Management in River Restoration." Inter-Agency Workshop on Modeling Tools for Watershed Restoration, Sacramento. May 23, 2002.

"Changing Paradigms in River Management." AASHTO Task Force on Hydrology and Hydraulics. Annual Meeting, Coeur d'Alene Resort. May 9, 2002.

"Simulating Physical Processes at the Watershed Scale." Environmental Sciences, Engineering and Policy in the 21st Century (ESEP-21) Seminar Series, University of Michigan. May 2001.

"The Flood Control Controversy and Multi-Objective River Corridor Planning." Idaho Environmental Forum, Boise. May 10, 2000.

"Environmentally sensitive alternatives for the Truckee River." Invited Presentation to the Community Coalition for the Truckee River Flood Management Plan, City of Reno, Nevada. May 20, 2000.

"New Paradigms in Flood Management" Invited Presentation at Restoring the Arroyo, Pasadena, California, March 25, 2000.

"Changing Paradigms in River Management and the Emergence of Ecohydraulics" Engineering Seminar Series, Boise State University, March 8, 2000.

"Restoration of Large-Scale River Systems" Invited presentation and Chair, Panel 2: Living Waters: Our Natural Heritage. Eastern Idaho Watershed Conference, October 21-23, 1999.

"Watershed Management - Is It Truly Achievable?" Presentation and Discussion Leader, ASCE Wetlands Engineering and River Restoration Conference, March 1998.

"How Fast Should the Flow Rate Change?" Boise River 2000, Boise, February 1998.

"The Flood Control Controversy: Traditional Approaches vs. Integrated Flood Management." ASCE, San Francisco. March 27, 1997.

Grants and Contracts Awarded:

Individual Research Contracts (for further details refer to http://ecohydraulics.uidaho.edu):

Identifying Indicators and Guides for the Sustainability of Pools in Gravel Bed Streams: a laboratory and field verification. US Bureau of Reclamation Science and Technology Program. 2010-11.

A large-scale laboratory facility for alluvial and gravel-bed rivers. Congressional Authorization 2004-06, administered through FIPSE.

Simulation of the Effects of Floodplain Restoration along the Boise River. IDWR, City of Boise and FEMA. [2000-2001]. Reactivated by IDWR in 2009. 2009-12.

Fate and effects of the transport of mine tailings through the Coeur d'Alene river system. Idaho Department of Environmental Quality. (PI: P. Goodwin) [2001-2004].

Lower Red River Meadow Restoration Project. Idaho County Soil and Water Conservation District and Bonneville Power Administration. This project will design the restoration of a natural channel configuration and will monitor the geomorphic, hydrologic and ecologic evolution of the site following implementation. The site will also provide outdoor classroom opportunities for K-12 school children, undergraduates and a field laboratory for research [1998-2005]

National Science Foundation CAREER Grant: Ecohydraulics: Simulation of Physical Processes in River Ecosystem Management. The grant funds long-term monitoring of four watersheds, ranging from a pristine undisturbed watershed to a heavily urbanized catchment in San Francisco Bay. The grant integrates undergraduate education, research and disadvantaged high school children. [1999-2004].

Simulation of the Geomorphic and Ecologic Evolution of the 12 mile Reach, Salmon River. Idaho Department of Fish and Game and Bonneville Power Administration Fish and Wildlife Mitigation Program. [Phase I, 1999-2002]

Simulation of High and Low Temperature Extremes in the Upper Salmon River. Department of Fish and Game and Bonneville Power Administration Fish and Wildlife Mitigation Program. [2002-04]

Aquatic Systems Review: Quantifying the Benefits of Management Actions at the Watershed Scale. Bonneville Power Fish and Wildlife Mitigation Program, [1999-2001].

USGS/FEMA/IBDS: Studentship in Floodplain Research, [2000-01].

New Paradigms in River Management. A Workshop for the Walla Walla District, US Army Corps of Engineers, February 1999.

University of Idaho Seed Grant. Simulation of River Channels and Ecological response following Restoration: Example of the Red River. [1997-98].

State of Washington, Department of Ecology. Review of Wetland Function Assessment Project. [1997].

Salinity and Water Quality Modeling in the Tijuana Estuary. This study is funded by NOAA to investigate the effects of sewage spills on freshwater pulses released from the International Treatment Plant on the U.S.-Mexico border. Field measurements indicate an unusual mixing behavior within the estuary and adjacent pristine tidal wetlands in Oneonta Slough. [1995-98].

Collaborative Research Grants:

National Science Foundation: 2011 National NSF EPSCoR Conference, Coeur d'Alene, Idaho.

Deadwood River Project: Reservoir Operations Flexibility Investigation. US Bureau of Reclamation. 2009-2012: This project integrates current research at UI with real management applications. Real-time sensors will report through satellite to drive 3-d models of a river and reservoir system. This data is linked with real-time tracking of endangered bull trout to understand how reservoir operations affect the fish behavior. This project also includes collaboration with NASA to deploy their experimental green LiDAR technology for surveying topography, bathymetry and vegetation remotely.

Murdock Charitable Trust. *Instrumentation for the Idaho Stream laboratory.* [2007-09] PIs Ralph Budwig, P.Goodwin and K.Jorde.

National Science Foundation. *"Human, Physical, and Natural Capital Investment in Patagonia: a Predictive Approach under the Sustainability Criterion.* National Science Foundation. Pan American Advanced Study Institute. [2007-09]. PIs P.Goodwin, D. Nalle and S. Daley-Laursen.

EU and Danish Academy of Science. "*Riskpoint. Assessing the Risks posed by Point Source Contaminants to Groundwater and Surface Water Resources".* [2009-11] Danish Technical University, Aarhus University and DMU-AY PI: M. Butts, co-PI. P.Goodwin.

USDA-FS Rocky Mountain Research Station. Multiple collaborative research projects (2007-2010). Example: *Alternative Fuel and Fire management* [2007-09]. PI C. Luce, co-PI P. Goodwin

Idaho's NSF Research Infrastructure Improvement Award (RII). *Idaho Experimental Watershed Network*. July 2005-2008. [J.M. Shreeve, ESPCoR State Director: Co-PIs G. Bohatch and P. Goodwin]. .

Lead Expert for a long-term research and science program related to a multi-state ecosystem litigation. For the Office of the Governor in a large East Coast State. Confidential Activity. August 2005-06.

A Synthetic Analysis of the Scientific Basis of Ecological restoration of Stream Ecosystems. National Center for Ecological Analysis and Synthesis/National Science Foundation. (PIs: Margaret A. Palmer, University of Maryland and J. David Allan, University of Michigan). [2002-06].

IMPACT: Software for Prioritizing Restoration Actions at the Watershed Scale. Bonneville Power Administration. 2001-02 (PI: P. Goodwin/V. Babovic, *DHI Water and Environment).*

Hydroinformatics: Computer and Infrastructure Support for the UI Ecohydraulics research Group in Boise. Congressional Authorization 2000-01, administered through FIPSE. (Technical PI: P. Goodwin/ Administrative PI: L. Stauffer). [FY01-04]

Modeling for Restoration of Watersheds in Central Guatemala following Hurricane Mitch, 2000-2004. US AID and USGS. (PI: L. Mink/ P. Goodwin).

Engineering and Physical Sciences Research Council, UK. Collaborative Research Travel Grant, 2001. (PI: N.G. Wright/Collaborator P. Goodwin)

Simulation of River Channel Evolution – Example of the Yankee Fork, 2000-02. US Forest Service. (PI: P. Goodwin/ J. Buffington)

Simulation of Total Dissolved Gas and Temperature in the Clearwater River System, Phase I, 2000. Idaho Department of Water Resources and the University of Idaho (PI: S.J. Wright/P. Goodwin)

Collaborative Research Grants (cont.):

Meadow Creek Natural Recovery Program, 1999-2000. Nez Perce Tribe and USFS. (PI: P. Goodwin/C.M. Falter)

Summary of Unanticipated Hydrologic and Ecologic Consequences of Large Dams, 2000. World Commission on Dams (PI: P. Goodwin/ C.M. Falter)

New Paradigms in the Management of River, Estuarine and Wetland Ecosystems. A NATO Advanced Research Workshop. (PI: Ambassador P. Tomka, United Nations/ P. Goodwin)

Lake Amititlan Water Quality Assessment, Phase I, 1999. For the Office of the President, Guatemala. Idaho Water Resources Research Institute (PI: Dr. Roy Mink / P. Goodwin).

FEMA Project Impact: Lawyer Creek Flood Mitigation Plan, 1999. (PI: Dr. J. Milligan/ P. Goodwin and the CE521 class).

D2K: Data to Knowledge. A Danish Academy of Sciences TALENT Grant (PI: Dr. V. Babovic, Danish Hydraulic Institute). UI is an evaluation site and the grant funds exchange visits for UI research students to visit Denmark.

Simulation of Tidal Circulation and Water Quality in Southern California Wetlands, San Diego State University Foundation. Pacific Estuarine Research Laboratory and Philip Williams and Associates, Ltd. 1994-95.

Modeling of Flow and Solute Transport Processes in Coastal Embayments, NATO Research Award. University of Bradford, United Kingdom; Middle East Technical University, Turkey; University of Washington, USA; and Philip Williams and Associates, Ltd., USA. 1993-95.

EEC Collaborative Research Program. A grant awarded to the Research Group at Bradford, Tongji University and UNIRAS A/S (a leading computer graphics software company based in Denmark). The project studies sediment and pollutant transport in the coastal environment by field monitoring and computer simulation. [PI: R.A. Falconer] 1989-91.

Academic Link Agreement with the People's Republic of China. A research and exchange program funded by the British Council, initiated by Professor R.A. Falconer. Participating organizations are the University of Bradford, Tongji University (Shanghai), Peking University (Beijing), and the Institute of Power and Water Conservancy (Beijing). 1988-90.

Modeling Sediment and Pollutant Transport Processes Using Microcomputers. This IBM study grant was the first of its kind to be awarded in the United Kingdom. This grant allowed graphic visualization of complex flow fields for interdisciplinary research and undergraduate teaching. [1987-89]. [with Dr. R.A. Falconer]

Simulation of Floods Due to Dam Failure and Other Extreme Events. For the Department of the Environment (United Kingdom), $60K, in collaboration with the U.S. National Weather Service. [1988-89]. [With Dr. Nigel Wright.]

Application of Higher Order Wave Theories. This work was supported by grants from Standard Oil of California (Chevron) and IBM and coordinated by Professor R.J. Sobey. 1985-86. This research was later combined into a software package and is available commercially under the name WAVEPRO.

SERVICE:

Major Committee Assignments:

University of Idaho:

University:
- University Strategic Plan Update Steering Committee, 2010-present.
- Federal Relations Working Group, 2009-present.
- University Finance and Budgeting Committee, 2009-present.
- Committee on Instituting Institutes. 2009-10.
- University Request for Innovation (RFI) Assessment Committee (2008-09)
- Strategic Planning: Team 2 Committee. 2007-2010.
- President's Commission on Research Enhancement through Improving Information Technology Infrastructure. June 2005-08.
- University Promotions Committee, 2005-08.
- Boise Futuring Committee, 1999-2001
- Information Technology Committee, 2000-03; 2005-08

University of Idaho - Boise Center
- Academic Council, 2007-present
- Chair, Search Committee for Associate VP/Center Executive Director 2006-07
- Leadership Team and Strategic Planning Committee, 2004-08
- Boise Center Dean Search Committee, 2000-01

College of Engineering:
- Research Council, 2009-present
- Tenure and Promotion Committee, 2005-08
- College of Engineering Executive Committee, 2004-present
- Engineering Research Committee (Chair: Associate Dean Woodall), 1997-99
- Editorial Committee, Engineering Advancement, 1998-present
- Faculty Search Committee - Water Resources Position in Kimberley, 1998
- Faculty Search Committee - NSF Distinguished Professor in Boise, 2000
- Faculty Search Committee - Hydrology Position in Boise, 2000
- Unit Strategic Planning Committee - Boise Center, 1998-99

Department of Civil Engineering:
- Tenure, Promotion & Competency Evaluation, 2004-08, Chair 2006-07.
- Committee for Curriculum Review, 1996-98
- Strategic Planning and ABET Assessment Committee, 1998-present
- Graduate Admissions/Recruitment, 1998-2001
- Ad Hoc Committee on Fluid Mechanics, 1998-2006
- Alumni Involvement, 1997-2000

University of Bradford, United Kingdom 1986-89:

University:
- Computerization of Bradford University
- Working Party on Hardware
- Working Party on Software

Civil Engineering Department
- Computer Committee
- Research Committee
- Staff/Student Liaison Committee and Staff Representative on Student Telford Society

National/International Science and Engineering Committees:

2010-present, National EPSCoR Foundation Board Member.

2008-09. External Peer Review of the Mississippi Coastal Improvements Program (MsCIP) Comprehensive Plan. For Battelle and the US Army Corps of Engineers.

2007-present. Elected Vice-President, International Association for Hydraulic Research and Engineering, July 2007. Elected Council member 2003-07.

2007-present, Independent Science Review Committee, Singapore-Delft Water Alliance, National University of Singapore.

2007, External Review Panel, Sediment Transport Modeling Review. Grand Canyon Monitoring and Research Center. February 15-16, 2007. USGS Pacific Science Center, Santa Cruz.

2006-present. Science Board, Louisiana Coastal Area Plan (rebuilding the ecosystem and wetlands of coastal Louisiana post- Hurricane Katrina). *Chair from 2009.* http://el.erdc.usace.army.mil/lcast/, http://lacoast.gov/ & http://www.louisianacoastalplanning.org/

2006-present. Member of Board, Boise Watershed Education Center, City of Boise.

2006-2008. NSF Advisory Committee on the WATERs Network Testbed Initiative (a merger of the CUASHI and CLEANER Environmental Observatories.

2006. NSF Workshop. EPSCoR 2020: Expanding State Participation in Research in the 21st Century – A New Vision for the Experimental Program to Stimulate Competitive Research (EPSCoR). PI: Jerome D. Odom. NSF Award# 0630747.

2005-09, Independent Science Board, CALFED program, California

2005-06, Committee on Environmental Aspects of Integrated Flood Management, World Meteorological Organization, WMO/GWP Associated Programme on Flood Management. Geneva, Switzerland.

2005-present. Science Advisory Panel. Tahoe Environmental Research Center, University of California.

2004-present. Member of the Review College for the Engineering and Physical Sciences Research Council, UK.

2004-present. Science Steering Committee, Multi-national Center for Patagonia Ecosystems Research (CIEP), Chile.

2005-07. NSF Committee to develop the Science Plan for the Collaborative Large-Scale Engineering Analysis Network for Environmental Research (CLEANER)

2004. Participant in NSF Project Science, Aspen Institute of Physics, October.

2004. Participant in NSF Sensors for Environmental Observatories, University of Washington, December.

2002-2006, National Academy of Sciences, Restoration and Protection of Coastal Louisiana Committee

1998-present. Stake-holders Advisory Committee. The Northwest Watershed Research Center, USDA Agricultural Research Service.

1996-, International Association for Hydraulic Research, U.S. Representative: Section Committee on Ecohydraulics

1996-2001, American Society of Civil Engineers, Chair, Task Committee on Tidal Wetland Restoration

1995-98, Chartered Institution of Water and Environmental Management, Overseas Correspondent

1994-96, Advisory Committee on Coastal Inlet Research Program, U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg

1994, Invited Contributor to NATO Advanced Research Workshop on Hydroinformatics, Castle Vanenburg, the Netherlands

1993-2001, International Association for Hydraulic Research, U.S. Representative, Committee on Hydroinformatics (formerly Computational Hydraulics)

1991-94, American Society of Civil Engineers, Tidal Hydraulics Technical Committee (Chair, 1992-93)

1989-92, External Advisor to the Computational Hydraulics and Environmental Modeling Research Group, University of Bradford, United Kingdom

1987-90, Elected Member, Pennine Hydrological Group, Institution of Civil Engineers

1987-89, Working Party on Flood Channels, Science and Engineering Research Council, UK.

Professional and Scholarly Organizations:

Membership in Engineering Professional Societies
Fellow, American Society of Civil Engineers
Fellow, Institution of Civil Engineers (United Kingdom)
Member, American Society of Engineering Education

Membership in other Professional and Learned Societies:
American Geophysical Union
Association of Environmental Engineering and Science Professors
Fulbright Association
International Association for Hydraulic Engineering and Research (IAHR)
(from 2009: International Association for Hydro-environment Engineering and Research)
Engineering Council (United Kingdom)
University of California (Berkeley) Alumni Association
California Institute of Technology Alumni Association

Professional Registration:

Civil Engineer, California (C047323), Idaho (8365)
Chartered Engineer, United Kingdom (436222-58).
European Ingenieur, Europe (UK/ICE/1299)

Recent Outreach Activities:

Reviewer for the USGS on the Interagency Controlled Flood Experiments on the Colorado River. 2009-present.

Workshop to develop 'The Path Forward for Hydroinformatics'. Workshop to set the process for defining the field, developing the future research agenda and clarifying the relationships between different professional organizations and academic programs. Tianjin, China. September 10-12, 2010.

Workshop on Research Management in the Eco-Environment, Establishing Global Eco-Environment Research Priorities for 2010-20.Invited Moderator and author, The Grand Challenges for the Future of Ecohydraulics Workshop . 8th International Symposium on Ecohydraulics. Sept 12-16, 2010. IAHR – Seoul, Korea.

Development of Joint Science Hypotheses and Region-wide Collaborative Proposals [April 8, 2010]. 2nd Annual Tri-State Western Consortium Meeting, *Collaborative and Interdisciplinary Climate Change Science, April 6-8, 2010.* Lake Tahoe.

Review of Research Program and Strategic Plan of the Institute for Environmental Fluid Mechanics, Karlsruhe Institute of Technology, Germany. June 2009.

Integrated Floodplain Management Partners Workshop. World Meteorological Organization, Geneva. November 13-14, 2008.

Research and Education in a Global Environment Workshop, January 8-9, 2008. Moderator/Coordinator of the Implementation Action Plan for 2008. Chile.

Osher Institute of Lifelong Learning, Boise State University. Our Changing Boise River Landscape and its Implication on our Community. October 2, 9, 16 and 23, 2007

Boise Exchange Club. Coastal Flooding in Coastal Louisiana: Lessons for Boise! October 5, 2007

Idaho Business Council. Building a globally competitive research program: the example of the Center for Ecohydraulics Research, Idaho Business Council, Arid Club, Boise. June 13, 2007

Boise School District. Mathematics and Science Academy. Landscapes, Sediments and Mathematics – the example of Coastal Louisiana. April 2-3, 2007.

Student Chapter Council Liaison, International Association for Hydraulic Research. Responsible for developing the concept of international educational network between student chapters. Plan presented and approved by IAHR Council, September 2005.

Recent Outreach Activities (cont.):

Boise River Watershed Educational Center. Board Member of Boise Watershed Exhibits, a non-profit organization dedicate funds for educational exhibits for the new educational center as well as educational activities related to the Boise River and Watershed. 2005-present.

Search Committee for Lead Scientist, Science Program, CALFED June 2005-October 2005, June 2007-January 2008

Member, The College of the Engineering and Physical Sciences Research Council, United Kingdom, 2002-present.

Lecturer and participant in the NSF *"Scientists and Engineers in the Schools"* Program to celebrate the 50th Anniversary of the National Science Foundation, 2000-01.

Invited Reviewer, Draft Strategic Framework, Rocky Mountain Research Station. November 9th, 2001.

Co-Chair of the Flood Mitigation Task Committee for the Treasure Valley, at invitation of Brent Coles, Mayor of Boise, 1999-present.

Interagency Work Group on Temperature and Total Dissolved Gas, at invitation of Idaho Department of Water Resources, 1999-2003.

Scientific Review Panel for the San Dieguito Lagoon, California Coastal Commission, 1999-2003.

Associate Editor for the *Journal of Hydraulic Engineering*, American Society of Civil Engineers. Responsible for computational hydraulics with special emphasis on river and wetland restoration and management, 1997-2001.

Editorial Committee for the *Journal for Hydraulic Research*, International Association for Hydraulic Research, 1998-2002.

Editor, *Journal of Hydroinformatics*. 1999-2003. This new Journal (launched in January 1999) is published jointly by the International Water Association and the International Association for Hydraulic Research. Responsibility for computational hydraulics, environmental modeling and restoration.

Liaison Working Group, Northwest Watershed Research Center, USDA Agricultural Research Service. 1998-2002.

NOAA National Estuarine Research Reserve Program. Technical Review Committee. South Slough, Oregon. 1997-2005.

Scientific Review Panel, US Army Corps of Engineers, Tidal Inlet Research Program, 1995-97.

Lead Examiner: For Chartered Institution of Water and Environmental Management, London. Examiner and US Correspondent for the international C. Engr. registration (equivalent to PE in US), 1996-98.

Recent Reviews for Grants include:

National Science Foundation
M.J. Murdock Charitable Trust
National Wildlife Federation
USGS Water Resources Research Regional Competitive Grants Program
American Chemical Society
Board of Regents Support Fund, State of Louisiana
California Sea Grant Program
Oregon Sea Grant Program

Recent Reviews for Journals include:

Journal of Hydraulic Engineering
Journal for Hydraulic Research
Journal of River Basin Management
Canadian Journal of Civil Engineering
Earth Surface Processes and Landforms
Water Resources Research
Environmental Engineering Science
Proceedings of the Institution of Civil Engineers
American Shore and Beach

Selected Recent Reviews of Texts include:

Long-term Benefits and Performance of Dams, Ed. Henry Hewlett. British Dam Society, 676p. Review for the Institution of Civil Engineers.

Restoring Streams in Cities: A Guide for Planners, Policymakers and Citizens, by A.L. Riley, Island Press, p. 340.

Tides, Bores and Mean Sea Level, by N.T. Pugh. John Wiley Publishers. For *Times Literary Supplement* (London).

Conference Organizing Committees:

2009-11, International Scientific Editorial Board. 34th IAHR World Congress. Balance and Uncertainty: Water in a Changing World. Brisbane, Australia. June 26-July 1. 2011.

2008-10, Scientific Advisory Committee, 9th International Conference on Hydroinformatics, International Association for Hydraulic Research, Tianjin, China. Sept 7-11, 2010.

2008-10, International Scientific Advisory Committee, 9th International Symposium on Ecohydraulics, International Association for Hydraulic Research, Seoul, Korea, Sept 12-16, 2010.

2007-09. International Advisory Committee for Aquaterra 2009, the Netherlands.

2006-09, International Scientific Advisory Committee, Joint International Conference on Hydroinformatics and Ecohydraulics Symposium, International Association for Hydraulic Research, Concepcion, Chile, 2009.

2006-09, International Scientific Advisory Committee, Joint International Conference on Hydroinformatics and Ecohydraulics Symposium, International Association for Hydraulic Research, Concepcion, Chile, 2009.

2004-06, International Scientific Advisory Committee, 7th International Conference on Hydroinformatics, HIC 2006. Joint Conference of International Association for Hydraulic Research, and International Association for Hydrological Sciences. 4th-8th Sept, 2006, Nice, France.

2003-2005, XXXI Congress of the International Association for Hydraulic Research, September 2005, Seoul, Korea.

2000-02, Hydroinformatics 2002, 5th International Conference on Hydroinformatics, University of Cardiff, July 2002.

2000-2001 First International Conference on River Basin Management, Wessex Institute of Technology, UK, September 2001.

1999-2001, NATO Advanced Research Workshop, "New Paradigms in River and Estuarine Management", Sun Valley, Idaho, April 2001.

1998-2000, Hydroinformatics 2000, 4th International Conference on Hydroinformatics, Iowa City, Iowa Institute for Hydraulic Research. July 18-21, 2000.

1997-98, Watershed Management Council 7th Biennial Conference: Western Watersheds: Science, Sense and Strategies, Boise, Idaho, October 19-23, 1998. Local Organizing Committee.

1996-98, ASCE Wetlands Engineering and River Restoration Conference, Denver, March 20-29, 1998.

1992-94, International Conference on Wetland Management. Chair, Overseas Committee. Institution of Civil Engineers, London, June 1994.

1987-92, Co-organizer First, and Second International Conference on Hydraulic Modeling of Coastal, Estuarine, and River Waters, United Kingdom, September 1989 and 1992.

HONORS AND AWARDS:

Distinción, University of Concepción. For research leadership and contributions to the development of the Centro de Ciencias Ambientales, EULA-Chile, 2010.

University Research Professor of the Year Award, University of Idaho, 2008

Lemley International Individual Award for the Environment, 2007.

Outstanding Faculty Award, 2006. College of Engineering, University of Idaho.

Gledden Senior Fellowship, 2003

Fulbright Award, 2003-04

The DeVlieg Presidential Professorship, 2001-present

John and Maybelle Tucker Award, University of California, Berkeley, 1986

Hans Albert Einstein Memorial Award, UC Berkeley.1985

Science and Engineering Research Council Award, 1983-85

Fulbright Scholarship, 1981-83

Selected Student Awards

Diego Caamano
Presidente de Republica Scholarship, Chile, 2004-2008.
University of Idaho, International Student of the Year, 2008.

Alex Garcia
Fulbright Scholarship, 2008. University of Concepción student scholarship.

S. Parkinson, 2003.
John F. Kennedy Prize. International Association for Hydraulic Research. One of three 2003 awards. "Response of White Sturgeon to Various Hydropower Operating Schemes". Proceedings of the XXX Biennial Conference. JFK Student Paper volume. 1-7.

D. Fuhrman, 1999.
Fulbright Scholarship, 1999. To Technical University of Delft, the Netherlands